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February 7, 1997

Mr. William F. Caton
Acting Secretary
Federal Communications Commission
1919 M Street, NW
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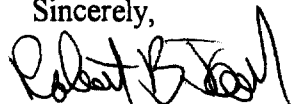
Re: MM Docket No. 87-268

Dear Mr Caton:

On behalf of Channel 3 of Corpus Christi, Inc., Louisiana Television Broadcasting, Corp., and Mobile Video Tapes, Inc., There is herewith transmitted an original and four copies of a document entitled "Request for Leave to Submit Supplement to Reply Comments and Supplement to Reply Comments of Channel 3 of Corpus Christi, Inc. Louisiana Television Broadcasting Corp and Mobile Video Tapes, Inc."

The enclosed "Supplement" is directed to the "Compromise" between the Broadcasters Caucus and the Association of Local Television Stations, Inc., - reflected in the Reply Comments of the Broadcasters Caucus.

Sincerely,


Robert B. Jacobi

cc Alan Stillwell



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BEFORE THE

Federal Communications Commission

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In the Matter of

Advanced Television Systems
and Their Impact upon the
Existing Television Broadcast
Service

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)
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) MM Docket No. 87-268
)
)

**Request for Leave to Submit Supplement to Reply Comments and
Supplement to Reply Comments of Channel 3 of Corpus Christi, Inc.
Louisiana Television Broadcasting Corp and Mobile Video Tapes, Inc.**

Request for Leave to File Supplement to Reply Comments

Channel 3 of Corpus Christi, Inc., licensee of television Station KIII, Corpus Christi, Texas; Louisiana Television Broadcasting Corp., licensee of television Station WBRZ, Baton Rouge, Louisiana; and Mobile Video Tapes, Inc., licensee of television Station KRGV, Weslaco, TX (hereinafter Aggrieved Parties) filed Reply Comments on January 10, 1997 in the above referenced proceeding. Aggrieved Parties Reply Comments demonstrated that 1) low band VHF channels are usable for DTV purposes and 2) low band VHF stations assigned to DTV UHF frequencies cannot replicate their existing analog station coverage area and therefore will suffer substantial coverage area losses. Subsequent to the filing of Aggrieved Parties Reply Comments, the Broadcasters Caucus (hereinafter, Caucus) and the Association of Local Television Stations, Inc. (ALTV) entered into a compromise pertaining to the matters of replication/power levels (reflected in the Caucus Reply Comments, pages 11-16) and vigorously

urged the Commission to adopt such compromise as a part of the Report and Order. The compromise bears directly on matters discussed in Aggrieved Parties Reply Comments. However, since this compromise was not advanced during the "Comment" stage of this proceeding, Aggrieved Parties were not afforded an opportunity to comment - by way of Reply Comments. Accordingly, Aggrieved Parties respectfully request leave to submit this Supplement to Reply Comments.

Supplement to Reply Comments

The adoption of the compromise, absent the restoration of Channels 2 through 6 for broadcast use, would ensure the coverage area losses described in the Reply Comments of the Aggrieved Parties. The Technical Statement prepared in support of the aforesaid Reply Comments was based upon a range of power levels subsequently encompassed by the compromise (see Technical Statement, attached hereto as Appendix A) - and which demonstrates the prospect of staggering coverage area losses - involving more than 260 low band analog stations. Surely, it was not the intention to cause major disruption to viewing habits throughout the entire country and to deprive viewers of existing service; indeed, to the contrary, the NPRM makes abundantly clear that replication of existing service was and is the primary objective.

Utilization of Channels 2 through 6 for broadcast use combined with the compromise is consistent with the intent of the parties to the compromise while, at the same time, permitting low band analog stations to achieve replication. Indeed, replication can be achieved without resorting to massive amounts of power, without the fear of power level disparity and without adversely impacting upon either the Commission/Caucus proposed Tables of Allocations.

Moreover, approximately 260 UHF DTV channels now proposed for VHF low band facilities would become available for other needed purposes.^{1/}

The existing documentation demonstrates that Channels 2 through 6 are usable for DTV purposes. The compromise combined with the inclusion of channels 2-6 as a part of the Core spectrum, constitutes a sensible approach to avoid loss of existing service and resolution of the problem.

Respectfully submitted,

CHANNEL 3 OF CORPUS CHRISTI, INC.
LOUISIANA TELEVISION
BROADCASTING CORP.
MOBILE VIDEO TAPES, INC.

By: 

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Dated: February 7, 1997

^{1/} It is reasonable to presume that low band analog stations operating on DTV UHF channels during the transition period and afforded the option to return to their prior low band channels, will overwhelmingly elect to do so.

Appendix A

“Technical Statement Submitted with Reply Comments”

Appendix B

TECHNICAL STATEMENT

TECHNICAL STATEMENT
SUPPORTING THE REPLY COMMENTS OF
LOUISIANA TELEVISION BROADCASTING, CORP.
CHANNEL 3 OF CORPUS CHRISTI, INC.
MOBILE VIDEO TAPES, INC.

This Technical Statement has been prepared on behalf of Louisiana Television Broadcasting Corp., licensee of WBRZ, Channel 3 of Corpus Christi, Inc., licensee of KIII, and Mobile Video Tapes, Inc., licensee of KRGV-TV, collectively called "Aggrieved Parties" or "AP," in support of reply comments in the Federal Communications Commission's Sixth Further Notice of Proposed Rule Making (FNPRM) in MM Docket No. 87-268. In the FNPRM the FCC has proposed an allotment table for digital television (DTV) assignments, with associated effective radiated powers (ERP) to replicate existing coverage. The FNPRM also proposes to reclaim the spectrum presently used for low VHF television (channels 2 through 6), and make it available for other services.

The following television are owned by AP:

WBRZ, Channel 2, Baton Rouge, LA
KIII, Channel 3, Corpus Christi, TX
KRGV-TV, Channel 5, Weslaco, TX

The FCC has proposed UHF channels for the DTV operations of these stations. It has also specified a DTV ERP at the licensed antenna height above average terrain (HAAT). These proposed DTV transmitting facilities were determined on the basis of replication of the current NTSC predicted Grade B coverage. The following is a summary of the FCC's proposed allotments for these stations.

<u>Station</u>	<u>NTSC Channel</u>	<u>NTSC ERP (kW)</u>	<u>Antenna HAAT (M)</u>	<u>DTV Channel</u>	<u>DTV ERP (kW)</u>
WBRZ	2	100	515	47	3652
KIII ¹	3	100	262	43	4648
KRGV-TV	5	100	290	20	4215

The NTSC ERP is peak power, whereas, the DTV ERP is average power. A "rule of thumb" approximation for comparison is average power is 25% of peak power.

¹ There is a pending application, File No. BPCT-960723KF, which requests an increase in KIII's HAAT to 288 meters.

If replication of existing service is the real goal for DTV service, then it is believed all VHF stations should return to their present NTSC channel locations for the final DTV operations. Returning to the current channel is the best means of insuring continued existing coverage. Use of the current channel involves less power, will be more spectrum efficient, will cause less interference, will have less impact on LPTV service, and will still permit the possible recapture of spectrum for other future uses.

As is evident with the FCC's proposed DTV allotment table, inband DTV allotments require significantly lower power than the NTSC counterpart. However, out-of-band allotments, involving NTSC VHF channel relocations to DTV UHF, require significant power increases in an attempt to replicate the current VHF coverage. For instance, there are 270 low VHF (channels 2 through 6) NTSC assignments in the FCC's proposed DTV allotment table. The average NTSC ERP for these assignments is 87.4 kilowatts (kW). The average antenna HAAT is 433 meters (1420 feet). The FCC allotted high VHF DTV channels to 6 of these assignments, and UHF DTV channels to the remainder. The average DTV ERP for the 6 high VHF allotments is 17.2 kW. The average DTV ERP for the 264 UHF allotments is 3521 kW.

There are 376 high VHF (channels 7 through 13) NTSC assignments in the FCC's proposed DTV allotment

table. The average NTSC ERP for these assignments is 266 kW, and the average antenna HAAT is 433 meters (1420 feet). The FCC allotted low VHF DTV channels to 4 of these assignments, high VHF DTV channels to 57 of the assignments, and UHF DTV channels to the remainder. The average DTV ERP for the 4 low VHF allotments is 2.3 kW. The average DTV ERP for the 57 high VHF channels is 5.6 kW. For the 315 UHF DTV channels, the average ERP is 1715 kW.

The average TV station going from a low VHF channel to a UHF DTV channel will require its ERP to be increased from 87.4 kW (peak) to 3521 kW (average) to replicate present coverage. The high VHF station going to a UHF DTV channel will require its ERP to be increased from 266 kW (peak) to 1715 kW (average) to replicate present coverage. From the above, it is evident that remaining inband will require less power. Going from a VHF channel to a UHF channel will require gargantuan power to replicate existing service.

The following is the minimum transmitter peak power ratings required for the three AP stations to replicate their present NTSC coverage on the proposed DTV channels.

<u>Station</u>	<u>DTV Channel</u>	<u>DTV ERP (kW)</u>	<u>Minimum Transmitter Peak Power Rating (kW)</u>
WBRZ	47	3652	700
KIII	43	4648	875
KRGV-TV	20	4215	800

From information provided by 2 manufactures (Comark and Acrodyne) transmitter cost estimates have been made. The cost of a 240 kW transmitter (peak power rating) is approximately \$1,600,000. A 300 kW transmitter would cost approximately \$2,200,000; and a 600 kW transmitter would be around \$4,000,000. Furthermore, 600 kW transmitters are not currently manufactured. In addition to the large transmitter costs, there will be significant costs for the waveguide and antenna system to handle these extremely large power levels. The operating costs for the proposed DTV facilities to replicate the current coverage would be astronomical as compared to the current NTSC operations.

Typical transmitter power of 120 kW is employed by many UHF stations. This size transmitter and its associated operational cost are found to be acceptable in the larger television markets. Although higher power UHF transmitters exist, up to 240 kW, they tend to be only in

the top markets.² If it is assumed that the AP stations employ a 120 kW transmitter capable of DTV operation and a typical antenna system, the anticipated effective radiated power of the station would be approximately 500 kW. With a DTV ERP of this magnitude, WBRZ would cover about 72 percent of its Grade B service area, KIII would cover about 64 percent of its Grade B service area and KRGV-TV would cover about 67 percent of its Grade B service area. Even assuming use of a 240 kW transmitter, Grade B replication would only improve by a small margin; 81 percent for WBRZ, 72 percent for KIII and 76 percent for KRGV-TV. Hence, with use of realizable power, coverage will be eliminated for many current viewers of these stations.

If the three AP stations remain at the current VHF channel locations for the final DTV operations after the transition, the power levels required for replication of coverage are much less. The following power levels are based on replication of the present Grade B coverage areas with the appropriate noise limited contours identified in the FNPRM.

² It is impractical, both from an initial capital outlay and from the continuing operating costs, for smaller market stations to employ such high power transmitters.

<u>Station</u>	<u>Channel</u>	<u>DTV ERP (kW)</u>
WBRZ	2	8.1
KIII	3	5.1
KRGV-TV	5	5.2

Under this approach, the present transmission line and antenna systems would be able to be employed for the DTV operation. The only modification required would be to the transmitter system to reflect DTV instead of NTSC operation. In many cases it will be possible to modify the present transmitter.

It is not practical to try and replicate the superior VHF propagation characteristics with brute force UHF power. The best way to replicate existing service is to use the existing channel location. The final DTV operation on the current NTSC channel will be at significantly less power than the current NTSC operation, resulting in lower operating costs. With less power, there will be less interference on the channels, providing opportunities for improvement in service, or the addition of new or relocated stations. Overall, it makes the most sense for each station to remain on the present channel location for the DTV operation.

The obvious question is how to accommodate the transition from NTSC to DTV. It is suggested that each station be assigned a second channel for DTV use during

station be assigned a second channel for DTV use during the transition period, similar to what has been proposed by the FCC. AP proposes to return to its current VHF channel for the final DTV operation and ultimate DTV replication of its present NTSC coverage. It proposes to employ transmitting facilities for the FCC's proposed UHF DTV channel based on replication of the station's current NTSC Grade A contour. The service within this NTSC contour is considered to represent the "heart" of each station's coverage. Once sufficient DTV sets are in the public's hands, then the stations will convert the current VHF NTSC channels for DTV use. The UHF DTV loaner channel would then be returned.

As noted above, the average NTSC ERP and antenna HAAT for the 270 low VHF assignments is 87.4 kW and 433 meters. For these transmitting facilities, the predicted Grade A (68 dBu) contour extends approximately 61.3 kilometers. To replicate the low VHF NTSC $f(50,50)$ Grade A contour with the DTV noise limited $f(50,90)$ 43.8 dBu contour requires a DTV ERP of only 2.5 kW in the UHF band. This is substantially less than the 3521 kW required to replicate the existing NTSC Grade B service area.

The average NTSC ERP and antenna HAAT for the 376 high VHF assignments is 266 kW and 433 meters. The predicted Grade A (71 dBu) contour for these transmitting facilities extends approximately 71.8 kilometers. To replicate the high VHF NTSC $f(50,50)$ Grade A contour with

the UHF DTV noise limited f(50,90) 43.8 dBu contour requires a DTV ERP of only 14 kW. This power is significantly less than the 1715 kW required to replicate the existing NTSC Grade B coverage area.

Under the above proposal, it is obvious that much lower power is possible for the commencement and orderly transition from NTSC to DTV. Hence, there will be less interference among stations, and less impact on low power television (LPTV) use. In addition, the cost of the equipment to be used during the interim DTV transition period will be much more reasonable. The following is a summary of the UHF DTV operations for the three AP stations as proposed by the FCC and as suggested by AP for the transition period.

<u>Station</u>	<u>NTSC</u> <u>Channel</u>	<u>Interim</u>		<u>Proposed</u>	
		<u>DTV</u> <u>Channel</u>	<u>FCC Prop.</u> <u>DTV ERP(kW)</u>	<u>Interim</u> <u>DTV ERP(kW)</u>	
WDDZ	2	47	2652	3	

The above suggestion for the transition to DTV service requires retention of the low VHF band (channels 2 through 6). In its FNPRM the FCC proposes to recapture the low VHF spectrum for other uses since it feels the low VHF channels are less suitable for DTV use because of the high level of atmospheric and man-made noise. AP disagrees with the FCC's assessment for DTV use of low VHF channels.

The September 1994 and October 1995 reports on the Charlotte, North Carolina DTV field tests do not conclude that low VHF channels are unsuitable for DTV use. The VHF observations at Charlotte were made on channel 6. The VHF test was run at one-tenth NTSC power, or an NTSC peak ERP of 10 kW. The DTV power was conducted at one-sixteenth NTSC power, or an average ERP of 0.63 kW.

The reports indicate the channel 6 tests at Charlotte experienced unanticipated interference from impulse noise, co-channel interference, cable system interference, and non-commercial educational (NCE) FM interference. The prevalence of the impulse noise was due to 60 Hz sources (AC power). The report stated: "It is believed the impulse noise problem in Charlotte is atypical [emphasis added] and may not be representative of other areas."

The field test reports indicate that satisfactory NTSC VHF reception occurred at 39.6% of the locations. Satisfactory DTV VHF reception occurred at 81.7% of the locations, more than twice the satisfactory NTSC locations. In other words, DTV service was substantially better than NTSC, even at the low power level used. The DTV system performed significantly better than the NTSC system in the presence of impulse noise. Adding 6 dB of power (i.e., DTV ERP of 2.5 kW) improved the satisfactory reception from 82% to 94% of the locations. The reports indicate that if the DTV power for low VHF is increased 10 dB (i.e., DTV ERP of 6.3 kW), as expected for low VHF DTV operations, then the interfering sources would be substantially less effective in producing impairments.

The Charlotte report summarizes that because of the limited sample size and interference experienced, the low VHF results are inconclusive. The report suggests, and AP agrees, that more field testing is desirable. However, the report states that DTV performs significantly better than NTSC at low VHF. It may be that more DTV power than has been initially anticipated at low VHF for DTV will resolve the problem. The report does not conclude that low band VHF is not suitable for DTV. Therefore, AP urges retention of the low band VHF channels for TV use.

This suggested process for the transition to DTV and replication of existing service has many benefits.

- A. It will require much lower DTV power during the transition.
- B. There will be much less interference caused and received. The final DTV operation on the existing NTSC channel locations will likely have improved service due to the improved interference performance with DTV.
- C. There will be much less impact on LPTV operations. It will provide more opportunity for those LPTV stations that do become displaced.
- D. It will enable the use of more channels for DTV allotment to TV assignments not eligible in the initial table.
- E. It will enable potential recovery of the non-commercial allotments after the transition.
- F. It will permit an orderly inband relocation of UHF assignments for potential recovery of spectrum for other purposes.

operation with modifications to the transmitter system. It will only be necessary to employ modest power, more economical DTV facilities for the transition period.

In summary, AP requests retention of the low VHF channels (2 through 6) for TV use. AP also desires to return the three TV stations to their current NTSC VHF channels for the final DTV operations. It proposes to employ the UHF DTV channels suggested by the FCC during the interim transition period, replicating the present Grade A coverage. AP proposes to replicate its current NTSC Grade B coverage with the final DTV operation on the current VHF channel locations. It suggests consideration of the same scenario for all NTSC VHF stations for which the Commission has proposed UHF DTV allotments.



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